

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Mark M. Leather et al.	Examiner:	Hau H. Nguyen
Serial No.	10/730,965	Art Group:	2628
Filing Date:	December 8, 2003	Docket No.:	00100.66.0024
Conf. No.:	3662		
Title:	UNIFIED SHADER		

REMARKS FOR PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir:

Applicants respectfully submit that the Examiner's rejections include clear errors because the reference does not teach what the Examiner alleges and the reference does not disclose each and every claim limitation as claimed. Since the 35 U.S.C. §103 rejection is based on clear error, the rejection must be withdrawn.

Although certain claims have been allowed, Claims 1-5, 7-12, 14-18, 20-31 and 33-40 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over by Donham et al. in view of U.S. Patent No. 5,999,196 (Storm). There has been clear error since the Examiner's rejection fails to take into account actual claim language and since the Donham reference does not teach what is alleged. For example, in the "Response to Arguments" section of the final action, the office action alleges that the Examiner cited microblenders 72 and 73 comprising an ALU/memory pair as claimed. The final action further states "for example as shown in FIG. 4 or 5, the microblender comprising execution/math (104/105) – fifo (106) pair, and wherein each microblender, such as one in FIG. 5, perform both texture operations and color operations on the received packet (see col. 14, ln. 63 – col. 15, ln. 24)." However, as specifically set forth in the Donham reference, the FIFO 106 alleged to correspond as part of the ALU/FIFO pair of the claim does not operate in connection with the execution/math unit 105 as alleged.

Claim 1, for example, states:

at least one ALU/memory pair operative to perform both texture operations and color operations wherein texture operations comprise at least one of: issuing a texture request to a texture unit and writing received texture values to the memory

As clearly set forth in the claim, it is the ALU/memory pair that together, as a pair, are both operative as a pair to perform both texture operations and color operations. In fact, the FIFO 106 in Donham is merely a packet FIFO that simply stores a current packet that contains op codes and is not connected to the match unit 105. For example, as stated in col. 17, lns. 39-56 and reproduced below for convenience, it is clear that the only use of the FIFO 106 is not to perform both texture operations and color operations as required by the claim, but instead to merely temporarily store a current packet whose contents are then updated by a shifting of those contents to destination unit 107.

Destination unit 107 of FIG. 5 corresponds to unit 107 (or 117) of FIG. 4. With reference to FIG. 5, while unit 128 40 selects arguments and the arguments are processed in the input processing circuitry 129-134, 129A-131A, and 129B-131B, math units 136, 136A, 136B, and 138, and output processor 140, the current packet is shifted through FIFO 106 to destination unit 107. The packet is updated 45 when it is shifted out of FIFO 106. Specifically, destination unit 107 responds to control bits (generated in execution unit 128 in response to the current Opcode, and routed to unit 107) by replacing appropriate values of the packet emerging from FIFO 106 with corresponding values received from 50 output processor 140. As noted above, unit 107 also replaces the packet's current IP with an updated IP. As also noted above, one or more of the values inserted into the packet by unit 107 can function as condition codes for use by one or more processing units of pixel shader as predicates for 55 subsequent instructions.

The packet in the FIFO 106 is updated when it is shifted out of the FIFO 106 as stated above. These updated packets are then asserted to a downstream unit. As evidenced by the actual teachings and figures of Donham, the FIFO 106 alleged to correspond to an ALU/FIFO pair that together are operative to perform both color and texture operations, is not taught by the

Donham reference. The Donham reference teaches a contrary use and operation of FIFO 106. FIFO 106 merely stores an incoming packet which is then updated by unit 107. FIFO 106 as also shown in the referenced FIG. 4 by the Examiner and FIG. 5, is not connected in any way to the math unit 105. Accordingly, the figures also support what is taught in Donham which is different from that claimed by Applicant.

Since the other independent claims include similar language and since the reference does not teach what is alleged, Applicant respectfully submit that the independent claims are in condition for allowance. The dependent claims add additional novel and non-obvious subject matter but since there has been clear error with respect to the independent claims, there has also been clear error with respect to the rejected dependent claims.

Withdrawal of the rejections of the claims is respectfully requested and a Notice of Allowance is respectfully requested.

Respectfully submitted,

Dated: March 5, 2009

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